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Focus. . . Trends in Multiple Births

The number and percent of Missouri live births resulting from multiple deliveries has steadily increased to currently account for nearly two thousand births a year or 2.7 percent of all births in 1995 compared to 2.0 percent (less than 1500) of births in 1978. Figure 1 shows the three-year moving average of multiple birth sets since 1978 by race of mother. The trend lines for all races and for whites show consistent upward movement particularly since the mid-1980s bringing these rates closer to the African-American rate. As noted previously[1], the rate of multiple deliveries has traditionally been greater among African-American women. Multiple births are also more common among older women and higher order births.

Table 1 presents the rate of multiple births per 1,000 live births by race, age and birth order comparing three six-year time periods (1978-83, 1984-1989, 1990-1995). As Table 1 illustrates, the rates for the total population and for White mothers increase for all categories of age and birth order. The largest increase for white mothers was nearly 60 percent for age 35 and over with the smallest noted for ages 20-24 at 15.3 percent. After mothers 35 and older women experiencing a third birth showed the greatest increase. The change for African-American mothers is less consistent and less dramatic ranging from an increase of nearly 35 percent among mothers with third order births to decreases among fourth order births and mothers 35 and over. Rates for African-American mothers remain higher than those for white mothers with the exception of those women 35 years of age or older and women having a first birth. Some of the change in rates is due to a shift toward delayed child bearing where the rate of multiple births is higher. Consequently, the 1984-1989 distribution of births by age and birth order was used to standardize the earlier and later time periods.

As Table 1 shows, the adjusting for age decreased the change between the 1978-83 time period and the 1990-95 time period by approximately 17 percent with the exception of white mothers where there was nearly a 9 percent increase. Although the shift toward delayed child bearing is particularly evident among white mothers there has also been a corresponding increase in the proportion of multiple births occurring to teens among white females. Adjusting for birth order had little effect on the change between time periods except among African-American women. The adjusted increase between the 1978-1983 and 1990-1995 was 13 percent lower than the unadjusted for African American women. Adjusting for both birth order and age still accounts for little of the increase (less than 15 percent) of the increase in multiple births for all races and less than 10 percent of the increase among Whites. Although rates of multiple births have risen for most categories, the increase is especially noticeable among White women 35 years of age or older and women having second or third births. Most of the increase in multiple births has occurred among older mothers particularly older white mothers. Mothers 30 years of age and older account for 40 percent of multiple births compared to 31 percent of all births for 1990-95 births. In 1978-1983 the proportions were much closer among whites with older mothers giving birth to 23.7 percent of the multiple births and 22.8 percent of all births.

These trends closely parallel national trends[2] and reflect the widespread influence of fertility enhancing techniques which carry a much greater chance of producing multiple fetuses[3]. White women over the age of 30 are the preponderant consumers of fertility treatments[4] as is evident by the dramatic increase in multiple births among this subgroup. Estimates of the effect of assisted reproduction range as high as 35 percent of twin pregnancies and 77 percent of higher order multiple pregnancies.[3,5]

Multiple births are more likely to be low birth weight and thus carry a greater risk of mortality and morbidity. Figure 2 presents a comparison of singleton and multiple births for selected perinatal outcomes. Although higher order (3 or more) multiple births have even higher morbidity and mortality rates and are rapidly increasing, approximately 97 percent of multiple births are twin births. As Figure 2 illustrates, the odds of a poor outcome increase by a factor of five to eleven times for multiple births. Infant mortality in 1995 was over five times greater for multiple births than for singletons. The differentials for low birth weight and very low birth weight are even greater. Multiple births are nearly 9 times more likely than singleton births to be low birth weight and nearly 11 times more likely to be very low birth weight.

Low birth weight (lbw, <2500 grams) and very low birth weight (vlbw, <1500 grams) have increased in recent years for both singleton and multiple births. During the same time period neonatal mortality (death during the first 27 days of life) and infant mortality have decreased. Multiple births account for an increasing proportion of these poor outcomes. Utilizing 1984-89 as the standard and adjusting for age and plurality, 20 percent of the increase in low birth weight can be attributed to the increase in multiple births. For the latest time period (1990-95), multiple births while comprising only 2.6 percent of all births accounted for 19 percent of low birth weight births, 22 percent of very low birth weight births and 16 percent of neonatal deaths. During the earliest time period of 1978-1983, multiple births accounted for 2.0 percent of all births, 15 percent of low birth weight births, 19 percent of very low birth births and 13 percent of neonatal deaths. Clearly, the increase in multiple births is of concern because of both the health and the economic[3] consequences. As assisted-reproduction becomes more common so will multiple births with all the consequences in terms of morbidity and mortality unless concentrated effort is made to develop fertility enhancement techniques carrying lower risks for multiple gestations.

Multifetal pregnancies continue to be high risk and require early and continuous prenatal care with constant monitoring of mother and fetuses. Of course such care is possible only with early diagnosis.

References

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5. Corchia, Carlo, Mastroiacovo, Pierpaolo, Lanno, R., et al. "What Proportion of Multiple Births are Due to Ovulation Inducation? A Register-Based Study in Itality", Am J of Public Health 86(6) 851-854.

Table 1

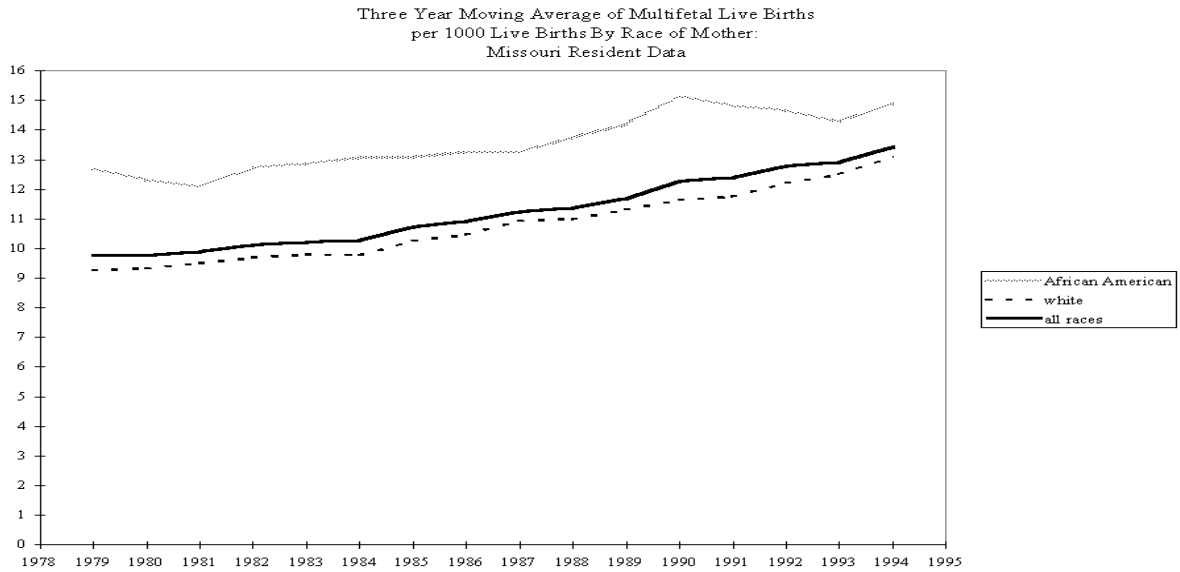
Age and Birth Order Specific Multiple Birth Sets per 1,000 Live Births:
By Race of Mother, Time Period and Percent Change

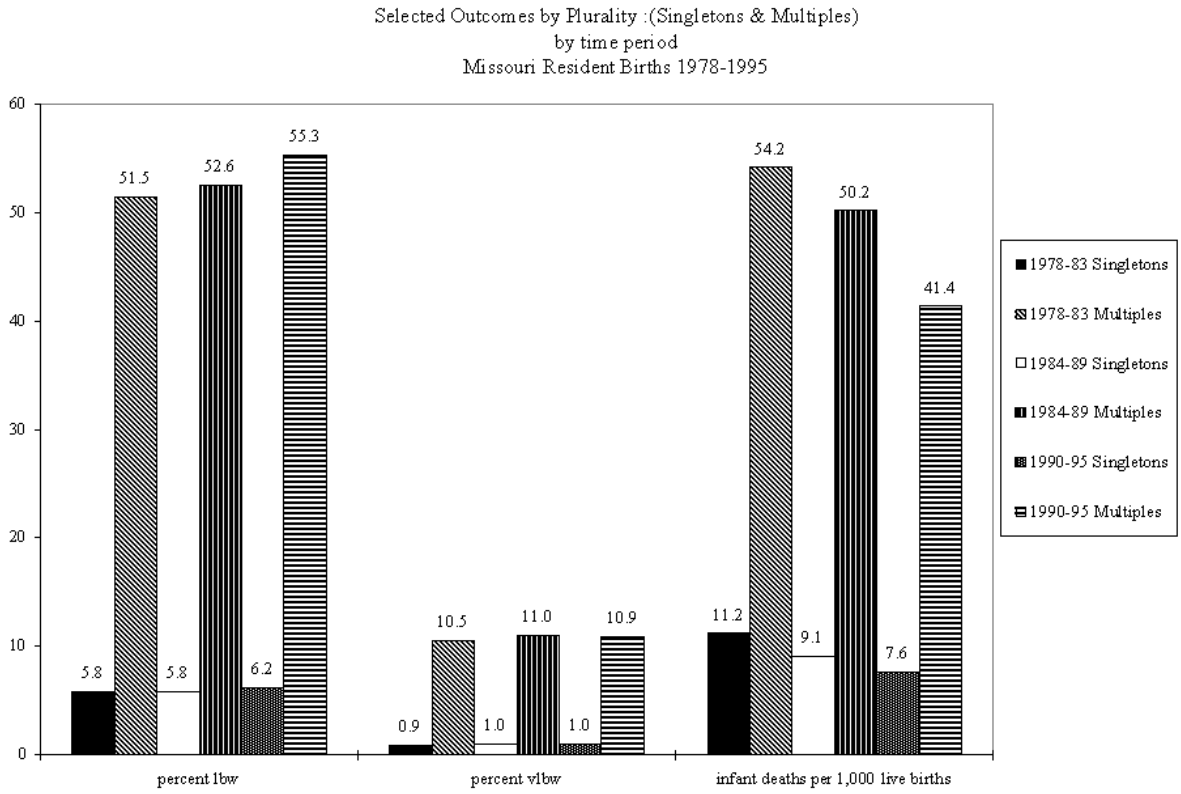
Missouri Resident Births 1978-1995

	All Races				*White*				*African American*			
				Percent Change				*Percent Change*				*Percent Change*
				1978-83/				*1978-83/*				*1978-83/*
	1978-83	*1984-89*	*1990-95*	*1990-95**	*1978-83*	*1984-89*	*1990-95*	*1990-95**	*1978-83*	*1984-89*	*1990-95*	*1990-95**
Age of Mother												
10-19	6.8	7.0	8.2	20.9	6.1	6.6	7.4	20.9	8.5	8.2	9.9	15.8
20-24	9.4	9.6	11.0	17.3	8.7	8.7	10.1	15.3	12.8	13.5	14.8	15.7
25-29	11.0	12.2	13.4	22.4	10.4	11.7	12.9	24.2	15.5	16.8	17.6	14.2
30-34	17.3	12.4	13.6	16.4	31.6	11.9	13.4	16.0	34.6	17.1	20.0	16.7
35+	4.2	11.7	13.9	17.0	45.5	10.8	13.4	17.2	59.8	17.5	15.8	16.8
Birth Order												
First	8.8	9.9	11.4	28.9	8.8	9.8	11.5	31.1	9.2	10.8	11.3	23.3
Second	10.2	10.9	13.2	29.6	9.7	10.6	12.9	33.6	13.7	13.4	15.4	12.4
Third	10.1	12.3	14.0	38.0	9.7	12.0	13.5	38.9	12.4	13.8	16.8	34.8
Fourth	14.2	14.3	16.2	13.7	12.2	12.6	14.9	22.5	20.1	19.0	19.4	-3.4
Total	10.0	11.0	12.9	29.4	9.5	10.6	12.6	32.7	12.7	13.4	14.9	17.5
Age Adjusted**	10.2	11.0	12.7	24.4	9.1	10.6	12.3	35.6	13.0	13.4	14.9	14.3
Birth Order Adjusted**	10.0	11.0	12.9	28.6	9.5	10.6	12.6	32.4	12.8	13.4	14.9	15.1
Age & Birth Order Adjusted	10.3	11.0	12.9	25.2	10.2	10.6	13.2	29.4	13.9	13.4	15.9	14.
Number of Sets	4,547	5,026	5,866		3,648	4,037	4,667		855	947	1,134	

*Percent change was calculated before rounding of rates.

**1984-1989 birth distribution by age and birth order was used as standard





Provisional Vital Statistics for August 1996

Live births decreased in August as 5,920 Missouri babies were born compared with 7,179 in August 1995. The birth rate decreased from 16.0 to 14.0 per 1,000 population.

Cumulative births also show decreases for the 8- and 12-month periods ending with August. For the 12 months ending with August, 72,794 Missouri babies were born compared with 74,803 one year earlier.

The **Natural increase** for Missouri in August was 2,174 (5,920 births minus 3,746 deaths). The rate of natural increase is down for all three periods shown below.

Deaths decreased in August, but show virtually no change for the 8- and 12-month periods ending with August.

Marriages decreased slightly for all three time periods shown below, while **dissolutions of marriage** increased for all three time periods. The marriage to divorce ratio for the 12 months ending with August decreased from 1.74 in 1995 to 1.67

in 1996.

The **infant death** rate increased slightly in August, but continued to show decreases for the 8- and 12-month periods ending with August. For the first two-thirds of the year the infant death rate decreased from 7.6 to 7.3 per 1,000 live births.

PROVISIONAL RESIDENT VITAL STATISTICS FOR THE STATE OF MISSOURI

Item	July				Jan. July cumulative				12 months ending with July				
	Number		Rate*		Number		Rate*		Number			Rate*	
	1997	1998	1997	1998	1997	1998	1997	1998	1997	1998	1996	1997	1998
Live Births	7,179	5,920	16.0	14.0	49,625	48,844	14.0	13.8	74,803	72,794	14.3	14.1	13.6
Deaths	4,311	3,746	9.6	8.8	36,570	36,577	10.3	10.3	53,803	53,876	10.3	10.1	10.1
Natural increase	2,868	2,174	6.4	5.1	13,055	12,267	3.7	3.5	21,000	18,918	4.0	4.0	3.5
Marriages	4,231	3,948	9.4	9.3	29,765	29,632	8.4	8.4	44,995	44,924	8.5	8.5	8.4
Dissolutions	2,236	2,255	5.0	5.3	17,212	18,322	4.8	5.2	25,835	26,836	5.1	4.9	5.0
Infant deaths	42	38	5.9	6.2	378	361	7.6	7.3	582	536	7.9	7.8	7.4
Population base (in thousands)	...	...	5,324	5,352	...	...	5,324	5,352	...	...	5,263	5,308	5,342

*Rates for live births, deaths, natural increase, marriages and dissolutions are computed on the number per 1000 estimated population. The infant death rate is based on the number of infant deaths per 1000 live births. Rates are adjusted to account for varying lengths of monthly reporting periods.

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